AERT - 9/18/96 Meeting

I. Introduction/Agenda

Dick Daniel introduced the meeting and summarized the agenda:

a). **CALFED Program Update**
- Concept of the Common Ecosystem Restoration Program (ERP)
- Storage & Conveyance Component options - 3 alternatives
- Refined Strategy for the ERP
- Adaptive Management
- Targets - October 31st workshop
- Nov-Dec ERP Plan/Report

b). **CUWA Proposal Presentation by CUWA**

c). **Time-Value of Water**

II. CUWA Proposal

Peter Rhoads of MWD introduced CUWA's proposal. He stated that CUWA was working within the CALFED process in developing their recommendations for a phased program that included adaptive management. Given the large gaps in knowledge, CUWA believes there remains many technical questions for which we do not have answers, thus the need for adaptive management and phasing of the restoration program.

He further related that the Bay-Delta system is in poor health due to multiple factors including habitat destruction, water diversions, toxics, exotic species, overharvesting of fish populations, hatcheries, weed growth and its control, ocean factors, and natural hydrographic variability.

Randy Bailey provided details of the proposal.

A. CUWA Approach

The CUWA approach to ecosystem restoration is a multispecies, system-wide, and phased-adaptive management approach. The goal is to fix the ecosystem from an aquatic perspective through addressing multiple problems. Concepts have been developed to address specific problems. All CALFED environmental objectives are being addressed.

B. Water Supply Objectives

A primary CUWA goal is to improve the quality and reliability of export water for water supply to its customers. To accomplish this goal the CUWA proposal has the following objectives:

- improve water quality at the export facilities by reducing toxics, pollutants, and Total Organic Carbon in export water
- improve the across Delta (north to south) flow of water
- manage salinity to minimize salinity in export water

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- ensure a full export capacity of 15 kcfs by removing Corps and ESA constraints on export capacity
- improve water supply reliability by removing ESA constraints and eliminating the need for future potential ESA listings that could affect ability to export water from the Delta through restoration of habitat
- reduce threats of floods on water supply by improving flows, levees, and reducing water velocities in Delta channels that may lead to levee erosion

C. Ecosystem Restoration Objectives

Another primary CUWA goal is to help restore the Bay-Delta ecosystem. To accomplish this goal the CUWA proposal has the following objectives:

- provide suitable habitat to sustain native species populations and distributions
- enhance hydrology of Delta by reducing the potential of seasonal flooding and increasing water residence times
- improving the migratory corridors for fish

D. Geographic Components of Proposal

Proposal focuses on the Delta, but includes the Sacramento and San Joaquin rivers and tributaries. The intent is to fix what is needed upstream of the Delta including an expanded Corps program on the Sacramento River and land retirement in the San Joaquin Valley. Bay initiatives include support for the Montezuma Wetlands project, as well as tidal wetlands restoration efforts in Petaluma and Napa marshes.

The Delta fix includes the Yolo:Cache Slough complex improvements including grading and removal of 2 million cubic yards of material in the the bypass to reduce stranding, improve gradients, and maintain flood conveyance capacity, while providing a permanent 200 cfs flow to the bypass to support up to 10,000 acres of permanent wetlands within the bypass, and incorporating the Colusa Drain to the bypass flow. At the lower end would be new and improved habitats in Little Holland, Liberty, and Prospect islands.

The proposal includes two key Delta features. 1) A salmon migration corridor is proposed for Steamboat and Miner Sloughs that would enhance migratory habitat and funnel juvenile salmon away from the Sacramento River through the complex and away from the primary routes of salmon from the river into the interior Delta. The size of the entrance to these channels would not be increased, but it would have a gated weir. The size of the corridor would be expanded by setting back levees along the existing sloughs. 2) Two widened cross-Delta channels are proposed from the Sacramento River to the San Joaquin River: one on either side of Staten Island that widen the existing channels of the North and South Forks of the Mokelumne River through the Delta. Water would enter the complex via a weir on the Sacramento River near Walnut Grove. Tyler and Bouldin islands would be flooded on the east side of Staten Island, while levees would be set back or eliminated along the east side of the South Fork of the Mokelumne east of Staten Island. Within these two widened corridors would be islands built to reduce the wind erosion effects on shorelines of the corridors. Shoreline and shallow water habitats

would be constructed in both corridors to provide optimal habitat conditions for key fish species including young salmon that rear in the Delta.

The proposal also includes a south Delta corridor with island conversions to terrestrial habitat, an enlarged Italian Slough intake system, and a combined new fish facilities for the Tracy and Byron export facilities. Randy Bailey stated that the habitat in this south Delta corridor would be a further safety net for fish being drawn to the Delta, as it would provide further biological drag for fish being drawn south toward the pumps. There are concerns as to how to adequately screen these new facilities as well as the weir at Walnut Grove because of tidal problems, low heads, lack of sweeping velocities in south Delta, and need to bypass fish to a location further from screen systems. The Old River barrier is also an essential element of the proposal

All of these features would be implemented in a phased approach. Phase I (immediate short term) - Buy land first. Category III hopes to buy an island in next few years and test feasibility of concept. Also hope to conduct some studies on inundation. Phase II (5-10 years) - Construct salmon corridor, Yolo, and Sacramento and San Joaquin river corridors. Also Napa marshes would be restored. Phase III - Petaluma marsh restoration and filling of Bradford and Mandeville islands. Phase IV - Montezuma wetlands and south Delta corridors would be undertaken. Phase V - South of Delta storage and new fish facilities including Italian Slough intake would be undertaken. Phase VI - An isolated conveyance facility would be built around the Delta if needed.

E. Benefits of Proposal

The new corridors are expected to improve water quality in the west and south Delta, as well as slightly freshening Suisun Bay. They will also increase the flood bearing capacity of the Delta and reduce flood stages in the northern Delta by up to four feet. This benefit could extent upstream to the mouth of the American River and thus reduce the cost of flood control for Sacramento. Another general benefit of the proposal is the elimination of hundreds of unscreened diversions and ag discharges from shifting ag lands to aquatic habitats.

F. Summary of Key Discussion Points

1. Bruce Herbold asked about the potential conflict between the objectives of increasing residence time and reducing TOC in exports. Peter Rhoads responded by stating that CUWA has a technical panel looking into this issue. Randy Bailey added that reductions in ag discharges from many Delta islands being converted to wetland habitat would reduce organic inputs in exports. **Action:** CALFED's environmental water quality workgroup should develop a paper on this question.
2. Bruce also asked about the proposals goal toward striped bass. Peter responsed by stating that CUWA is not proposing any direct measures to restore the striped bass.
3. Pete Chadwick addressed the lack of flow discussion in the proposal. Byron Buck stated that flows are not addressed in the proposal.

4. Kate Hansel would like to see a summary of how the CUWA proposal differs from CALFED's plans. **Action:** Develop a summary that compares the scope of CUWA actions with those of CALFED's.
5. Dick Daniel and Bruce Herbold expressed concern about toxics concentrations in the bypass given high concentrations in Cache Creek and Colusa Drain. Peter Rhoads stated that two years of study would be needed to perferct design.
6. Jim Arthur was concerned about higher salinities under the proposal during dry periods. CUWA experts believe tidal exhange in Carquinez will decline with the greater Delta volume - the optimal increase in volume has as yet not been determined.
7. Dick Daniel stated that CALFED is not as yet considering the Common Pool concept for the interior Delta. CALFED is concerned about the following:
    - low tidal velocities within the pool habitats
    - Mokelumne River salmon migrations
    - maintaining levees around the perimeter of the pool
    - effects on wildlife from the loss of considerable terrestrial habitat
    - loss of flow-through and dead-end slough habitat in the eastern Delta
    - potentially more Sacramento River water would move across the Delta than at present
    - large open water habitats are not natural to the Delta; concern for value of habitats like Franks Tract that are deeper due to subsidence
    - irreversable nature of Common Pool with costly levee setbacks

    CUWA representatives responded by stating levees will need improvement, but Mokelumne salmon should be able to find their way through the Delta especially given the river would enter the San Joaquin where it presently enters. Also loss of terrestrial habitats would be more than compensated by new habitats on western and southern Delta islands that will be converted to wildlife habitat under the proposal. As for the permanency of the Common Pool, they stated that such a bold stroke is needed to restore the health of the ecosystem.
8. Mike Thabault was also concerned about the potential of the Common Pool to disrupt migration of salmon through the Delta.
9. Bruce Herbold was concerned with the potential of lower tidal velocities in Delta channels hindering fish such as striped bass that depend on higher tidal velocities. He also sees the benefit of the salmon corridor component and the benefits of added floodplain inundation of the Yolo component. He also sees benefits to large tract sizes rather than long skinny efforts along levees. Randy Bailey stated that tidal velocities should remain high in the San Joaquin striped bass spawning areas.

10. Kathy Kelly asked about the potential effect of the common pool on water temperatures in the Delta. She related that San Joaquin temperatures are already a problem for salmon in the Delta. Randy Bailey responded by stating that modeling indicates minimal change in temperatures are expected because Delta temperatures easily reach equilibrium with air temperatures and small increases would have little effect on salmon since they are adapted to the seasonal patterns of warm water in the Delta.

11. Dick Daniel stated that CALFED is looking toward shaded riverine habitat along existing channels to reduce water temperatures in the Delta, and that he too is very concerned about increasing water temperatures with more open water that has longer residence times. He is also concerned about more water hyacinth clogging the Delta with the proposal. Peter Rhoads stated that the water hyacinth can be controlled through an aggressive control program.

12. Pete Chadwick expressed concern about the lack of fish screens on the Sacramento River intake near Walnut Grove. He would expect many salmon to enter the Common Pool if the proportion of Sacramento water increases, based on FWS studies. Randy Bailey stated that the FWS studies have flaws and that young salmon that enter the Common Pool will have good habitat for rearing.

13. Bruce Alevizon stated that the proposal elements upstream and within the Delta should be syncronized. The whole system should be looked at in an entire context and watershed perspective. He cautioned about relying on adaptive management, because it may take many years to see expected benefits.

14. Dick Daniel xpressed concern that the benefits of increasing TOC would be lost as it is now because of continued exports of this water in the South Delta.

15. Bruce Herbold suggested that internal gates be considered to redirect water and impacts.

16. In concluding there were several summary statements by AERT members. Dick Daniel stated that the proposal fits within the general context of the CALFED restoration program given the adaptive management approach and cautious measured monitoring of progress. Jim Arthur stated that IEP is ready to study the details through adaptive management and is prepared to begin studies soon on the Yolo bypass. Bruce Herbold stated that he thinks young salmon may due well under the Yolo and salmon corridor concepts but that this must first be tested. Cindy Darling remains concerned about fate of fish moving through corridors, and that these concepts should be thoroughly tested. Bruce Herbold suggested with phasing of components, all mitigation for later phases should be implemented early to make sure it works. Greg Zlotnik was concerned about whether the proposal was a package or catelogue of ideas. Peter Rhoads emphasized that this must be an integrated package to provide the needed balance.

III. Time Value of Water - DD

A. Introduction

Dick Daniel introduced the discussion on Time Value of Water.

- CALFED needs the ecological value of flow to refine storage and conveyance components by showing opportunities for diversion to storage and conveyance facilities.
- Comments have been received and our draft technical memo has been revised and distributed.
- We introduced more common sense into the process as recommended in first AERT meeting on the subject.
- We have nodes for developing time values of flow at key locations in the Delta, rivers, and tributaries.

B. Summary of Key Discussion Points

1. Concerns were raised by several AERT members as to whether the time value of flow through the Delta should consider potential benefits to water temperature or salinity at the CCWD intake at Rock Slough. It was concluded that neither of these factors should have a bearing on time value of flow in the Delta.
2. Concern was expressed by John Renning as to the potential use of the Time Value of Water as a tool in evaluating alternatives in the EIR/EIS. Dick Daniel related that this tool was intended only for component refinement.
3. Bruce Herbold again suggested that some form of risk assessment be developed instead of the time-value concept. Risk would be based on the likelyhood that water would be available.
4. Bruce Herbold stated that part of the confusion on the Time-Value concept is a lack of understanding as to the potential use of the tool.
5. Liz noted difficulties with the concept in defining priorities for windows of opportunities.
6. Pete Chadwick expressed concern as to whether this tool will provide what we need for storage and conveyance refinement - that is providing the windows of opportunity. He was also concerned with our ability to complete this task within two weeks. The document (tech memo) is not sufficient to alleviate their concerns as to the method or how we would get it done.
7. Bruce Herbold suggested that we drop the toxins dilution model for helping us develop time values of flow. The importance of flow can be built from the IEP's recent report submitted to CALFED.
8. Terry Mills stated that he was finding developing time values of flow difficult to accomplish. A more qualitative approach built in layers may prove more effective.